Amendments to the Claims

The following listing of claims replaces all previous listings and versions of claims in this application.

1. (Currently amended) A non-crosslinked polyolefin foam comprising a plastics component and a blowing agent, the plastics component comprising a first constituent and a second constituent, wherein the first constituent is a Ziegler-Natta catalyzed linear low density polyolefin and the second constituent is a low density polyolefin, ~~and wherein~~ the Ziegler-Natta catalyzed linear low density polyolefin has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes, and the foam has a density substantially the same as a foam made with 100% low density polyolefin under the same foaming conditions.

2. (Original) The polyolefin foam of Claim 1, wherein the second constituent is a low density polyethylene.

3. (Original) The polyolefin foam of Claim 1, wherein the plastics component comprises from 1% to 85% by weight of the first constituent, and from 99% to 15% by weight of the second constituent.

4. (Original) The polyolefin foam of Claim 3, wherein the plastics component comprises from 5% to 10% by weight of the first constituent, and from 95% to 90% by weight of the second constituent.

5. (Currently amended) The polyolefin foam of Claim 3 [[4]], wherein the plastics component comprises from 10% to 15% by weight of the first constituent, and from 90% to 85% by weight of the second constituent.

6. (Currently amended) The polyolefin foam of Claim 3 [[5]], wherein the plastics component comprises primarily of from 15% to 20% by weight of the first constituent, and from 85% to 80% by weight of the second constituent.

7. (Currently amended) The polyolefin foam of Claim 3 [[6]], wherein the plastics component comprises primarily of from 20% to 25% by weight of the first constituent, and from 80% to 75% by weight of the second constituent.

8. (Currently amended) The polyolefin foam of Claim 3 [[7]], wherein the plastics component comprises primarily of from 25% to 30% by weight of the first constituent, and from 75% to 70% by weight of the second constituent.

9. (Currently amended) The polyolefin foam of Claim 3 [[8]], wherein the plastics component comprises primarily of from 30% to 35% by weight of the first constituent, and from 70% to 65% by weight of the second constituent.

10. (Currently amended) The polyolefin foam of Claim 3 [[9]], wherein the plastics component comprises primarily of from 35% to 40% by weight of the first constituent, and from 65% to 60% by weight of the second constituent.

11. (Previously presented) The polyolefin foam of Claim 1, wherein the foam has a density less than 90 kg/m^3.

12. (Previously presented) The polyolefin foam of Claim 11, wherein the foam has a density less than 30 kg/m^3.

13. (Original) The polyolefin foam of Claim 1, wherein the polyolefin foam is a closed-cell foam.

14. (Original) The polyolefin foam of Claim 1, wherein the density of the first constituent is from 917 to 930 kg/m^3.

15. (Original) The polyolefin foam of Claim 1, wherein the crystallization temperatures of the two constituents differ by more than 8°C.

16. (Original) The polyolefin foam of Claim 15, wherein the crystallization temperatures differ by more than 12°C.

17. (Original) The polyolefin foam of Claim 1, wherein the melt flow index of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5g/10 minutes.

18. (Original) The polyolefin foam of Claim 1, wherein the melt flow index of the Ziegler-Natta catalyzed linear low density polyolefin is less than 3g/10 minutes.

19. (Original) The polyolefin foam of Claim 1, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 8.

20. (Original) The polyolefin foam of Claim 19, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5.

21. (Original) The polyolefin foam of Claim 1 further including nucleating agents and aging agents.

22. (Withdrawn and currently amended) A non-crosslinked polyolefin foam comprising a plastics component and a blowing agent, the plastics component comprising a first constituent and a second constituent, wherein the first constituent is a Ziegler-Natta catalyzed linear low density polyethylene and the second constituent is a polypropylene, ~~and wherein~~ the Ziegler-Natta catalyzed linear low density ~~polyolefin~~ polyethylene has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes, and the foam has a density substantially the same as a foam made with 100% polypropylene under the same foaming conditions.

23. (Withdrawn) The polyolefin foam of Claim 22, wherein the second constituent is a high-melt strength polypropylene.

Claims 24 to 42. (Cancelled)

43. (Currently amended) A method of manufacturing a non-crosslinked polyolefin foam comprising mixing a resin comprising a first constituent and a second constituent in an extruder, adding a blowing agent to the resulting mixture, and extruding the resulting mix into foam form, wherein the first constituent is a Ziegler-Natta catalyzed linear low density polyolefin and the second constituent is a low density polyolefin, ~~and wherein~~ the Ziegler-Natta catalyzed linear low density polyolefin has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes, and the foam has a density substantially the same as a foam made with 100% low density polyolefin under the same foaming conditions.

44. (Original) The method of Claim 43, wherein the second constituent is a low density polyethylene.

45. (Original) The method of Claim 43, wherein the first constituent is present in an amount from 1% to 85% by weight of the total polyolefin content.

46. (Original) The method of Claim 45, wherein the first constituent is present in an amount from 5% to 10% by weight of the total polyolefin content.

47. (Currently amended) The method of Claim 43 [[46]], wherein the first constituent is present in an amount from 10% to 15% by weight of the total polyolefin content.

48. (Original) The method of Claim 43 [[47]], wherein the first constituent is present in an amount from 15% to 20% by weight of the total polyolefin content.

49. (Currently amended) The method of Claim 43 [[48]], wherein the first constituent is present in an amount from 20% to 25% by weight of the total polyolefin content.

50. (Currently amended) The method of Claim 43 [[49]], wherein the first constituent is present in an amount from 25% to 30% by weight of the total polyolefin content.

51. (Currently amended) The method of Claim 43 [[50]], wherein the first constituent is present in an amount from 30% to 35% by weight of the total polyolefin content.

52. (Currently amended) The method of Claim 43 [[51]], wherein the first constituent is present in an amount from 35% to 40% by weight of the total polyolefin content.

53. (Original) The method of Claim 43, wherein the foam is extruded to a density of less than 90 kg/m³.

54. (Original) The method of Claim 43, wherein the foam is a closed-cell foam.

55. (Previously presented) The method of Claim 43, wherein the density of the first constituent is from 917 to 930 kg/m^3.

56. (Original) The method of Claim 43, wherein the crystallization temperatures of the first and second constituents differ by more than 8°C.

57. (Original) The method of Claim 56, wherein the crystallization temperatures of the first and second constituents differ by more than 12°C.

58. (Original) The method of Claim 43, wherein the first constituent has a melt flow index of less than 5g/10 minutes.

59. (Original) The method of Claim 58, wherein the first constituent has a melt flow index of less than 3g/10 minutes.

60. (Original) The method of Claim 43, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 8.

61. (Original) The method of Claim 60, wherein the polydispersity of the Ziegler-Natta catalyzed linear low density polyolefin is less than 5.

62. (Original) The method of Claim 43, further including mixing nucleating agents and aging agents with the first and second constituents.

63. (Original) The method of Claim 43, wherein the resultant mixture is extruded in a twin-screw extruder.

64. (Original) The method of Claim 43 further including controlling the melt temperature of the mix during extruding.

65. (Original) The method of Claim 64, wherein controlling the melt temperature includes matching the melt temperature of the mix to a pre-determined datum.

66. (Original) The method of Claim 65, wherein the pre-determined datum is determined by extruding 100% of the second constituent.

67. (Original) The foam produced according to the method of Claim 43.

68. (Withdrawn and currently amended) A method of manufacturing a non-crosslinked polyolefin foam comprising mixing a resin comprising a first constituent and a second constituent in an extruder, adding a blowing agent to the resulting mixture, and extruding the resultant mix into foam form, wherein the first constituent is a Ziegler-Natta catalyzed linear low density polyethylene and the second constituent is a polypropylene, ~~and wherein~~ the Ziegler-Natta catalyzed linear low density ~~polyolefin~~ polyethylene has a polydispersity of less than 10 and a melt flow index less than 10g/10 minutes, and the foam has a density substantially the same as a foam made with 100% polypropylene under the same foaming conditions.

69. (Withdrawn) The method of Claim 68, wherein the second constituent is a high-melt strength polypropylene.

Claims 70 to 92. (Cancelled)

93. (New) The polyolefin foam of Claim 1, wherein the foam has a thickness of at least about 0.8 mm.

94. (New) The polyolefin foam of Claim 22, wherein the foam has a thickness of at least about 0.8 mm.

95. (New) The foam produced according to the method of Claim 43, wherein the foam has a thickness of at least about 0.8 mm.

96. (New) The foam produced according to the method of Claim 68, wherein the foam has a thickness of at least about 0.8 mm.

97. (New) The polyolefin foam of Claim 1, wherein the first constituent and the second constituent are each of the same type of polyolefin.

98. (New) The polyolefin foam of Claim 97, wherein each polyolefin is polyethylene.

99. (New) The polyolefin foam of Claim 1, wherein the first and second constituents each have a different density.

100. (New) The polyolefin foam of Claim 1, wherein the first and second constituents each have a different melt flow index.

101. (New) The polyolefin foam of Claim 99, wherein the first and second constituents also have a different melt flow index.

102. (New) The polyolefin foam of Claim 97, wherein the first and second constituents each have a different density.

103. (New) The polyolefin foam of Claim 97, wherein the first and second constituents each have a different melt flow index.

104. (New) The polyolefin foam of Claim 102, wherein the first and second constituents also have a different melt flow index.

105. (New) The polyolefin foam of Claim 98, wherein the first and second constituents each have a different density.

106. (New) The polyolefin foam of Claim 98, wherein the first and second constituents each have a different melt flow index.

107. (New) The polyolefin foam of Claim 105, wherein the first and second constituents also have a different melt flow index.

108. (New) The polyolefin foam of Claim 22, wherein the first and second constituents each have a different density.

109. (New) The polyolefin foam of Claim 22, wherein the first and second constituents each have a different melt flow index.

110. (New) The polyolefin foam of Claim 108, wherein the first and second constituents also have a different melt flow index.

111. (New) The foam produced according to the method of Claim 43, wherein the first and second constituents each have a different density.

112. (New) The foam produced according to the method of Claim 43, wherein the first and second constituents each have a different melt flow index.

113. (New) The foam produced according to the method of Claim 111, wherein the first and second constituents also have a different melt flow index.

114. (New) The foam produced according to the method of Claim 68, wherein the first and second constituents each have a different density.

115. (New) The foam produced according to the method of Claim 68, wherein the first and second constituents each have a different melt flow index.

116. (New) The foam produced according to the method of Claim 114, wherein the first and second constituents also have a different melt flow index.